



Europäisches Patentamt
European Patent Office
Office européen des brevets



Publication number: **0 487 003 A3**

EUROPEAN PATENT APPLICATION

Application number: **91119661.6**

Int. Cl.⁵: **G01B 7/34, G11B 9/00**

Date of filing: **18.11.91**

Priority: **20.11.90 JP 317030/90**
17.07.91 JP 201151/91

Date of publication of application:
27.05.92 Bulletin 92/22

Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

Date of deferred publication of the search report:
14.10.92 Bulletin 92/42

Applicant: **CANON KABUSHIKI KAISHA**
30-2, 3-chome, Shimomaruko, Ohta-ku
Tokyo(JP)

Inventor: **Miyazaki, Toshihiko, c/o Canon**
Kabushiki Kaisha
30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Matsuda, Hiroshi, c/o Canon**
Kabushiki Kaisha
30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Kawade, Hisaaki, c/o Canon**
Kabushiki Kaisha
30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Eguchi, Ken, c/o Canon Kabushiki**
Kaisha
30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Kawada, Haruki, c/o Canon**
Kabushiki Kaisha
30-2, 3-chome, Shimomaruko

Ohta-ku, Tokyo(JP)

Inventor: **Kawagishi, Hideyuki, c/o Canon**
Kabushiki Kaisha

30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Yanagisawa, Yoshihiro, c/o Canon**
Kabushiki Kaisha

30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Yamamoto, Keisuke, c/o Canon**
Kabushiki Kaisha

30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Kawase, Toshimitsu, c/o Canon**
Kabushiki Kaisha

30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Oguchi, Takahiro, c/o Canon**
Kabushiki Kaisha

30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Takeda, Toshihiko, c/o Canon**
Kabushiki Kaisha

30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Inventor: **Tagawa, Masahiro, c/o Canon**
Kabushiki Kaisha

30-2, 3-chome, Shimomaruko
Ohta-ku, Tokyo(JP)

Representative: **Blumbach Weser Bergen**
Kramer Zwirner Hoffmann Patentanwälte
Radeckestrasse 43
W-8000 München 60(DE)

Slope detection method, and information detection/writing apparatus using the method.

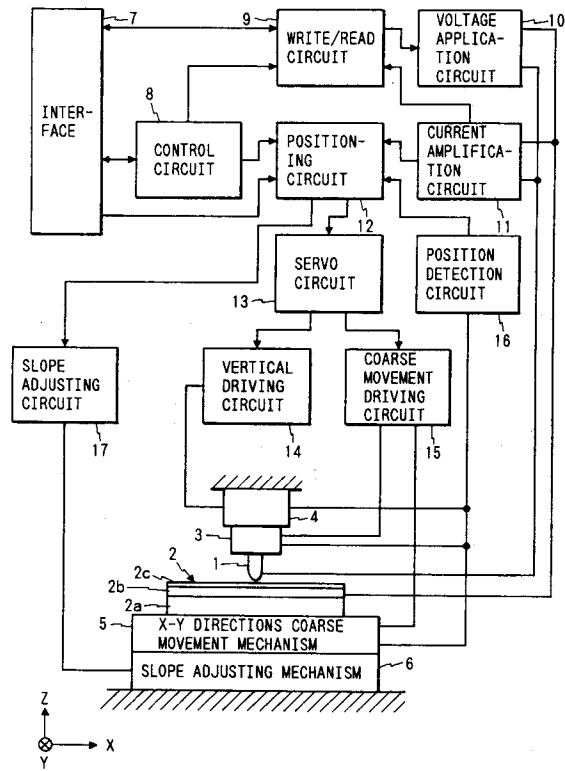
Disclosed is a method of detecting a slope of a surface of an information record medium in an apparatus for detecting/writing information using one or a plurality of probes from/in the information record medium, comprising, scan step of scanning the sur-

face of the information record medium using the probe, information detection step of detecting information from the surface of the information record medium through said probe when the scan step is executed; and slope detection step of detecting the

EP 0 487 003 A3

slope of the surface of the information record medium on the basis of the information detection result.

FIG. 4





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	EP-A-0 338 083 (HITACHI LTD)	1, 3, 5, 7, 9, 12-14, 16	G01B7/34 G11B9/00
Y	* the whole document *	2, 4, 6, 8, 10, 11, 15	
Y	--- EP-A-0 240 150 (RANK TAYLOR HOBSON LTD) * column 1, line 20 - column 3, line 32 * * column 5, line 55 - column 11, line 14; claims; figures *	2, 4, 6, 8, 10, 11	
Y	--- EP-A-0 368 579 (CANON KABUSHIKI KAISHA)	15	
A	* column 1, line 1 - column 2, line 2 * * column 11, line 54 - column 12, line 56; figures 10-12 *	1, 8, 9, 16	
A	--- GB-A-2 204 130 (MITUTOYO CORP) * the whole document *	1, 2, 4, 6-11, 14, 16	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	--- MEASUREMENT SCIENCE AND TECHNOLOGY vol. 2, no. 3, 1 March 1991, BRISTOL pages 191 - 197; T. KANADA ET AL; 'A THREE DIMENSIONAL SURFACE PROFILE MEASURING SYSTEM WITH A SPECIMEN LEVELLING DEVICE'	1, 2, 4, 6-11, 14, 16	G01N G01B G11B
A	--- PATENT ABSTRACTS OF JAPAN vol. 014, no. 389 (P-1095)22 August 1990 & JP-A-2 147 803 (NIPPON TELEGR & TELEPH CORP) 6 June 1990 * abstract *	1, 2, 4, 6-11, 14, 16	
A	--- US-A-3 903 735 (GOULD INC) * the whole document *	1, 2, 4, 6-11, 14, 16	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19 AUGUST 1992	Examiner BROCK T. J.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)

			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19 AUGUST 1992	Examiner BROCK T. J.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	